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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,419	10/11/2001	Sung-Jin Kim	678-753 (P9929)	9087
28249	7590	06/28/2005	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			KHOO, FOONG LIN	
			ART UNIT	PAPER NUMBER
			2664	
DATE MAILED: 06/28/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/975,419	Applicant(s) KIM ET AL.	
	Examiner F. Lin Khoo	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s), _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-5, 6, 7-8, 9, 10, 11, 12-14, 15-17, 18-20, 24-25 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 3 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/14/05, 5/11/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because in (i) FIG. 5, step 513, "DSCH" is referred to on page 23, line 27 as "PDSCH" and (ii) FIG. 9, step 913, "DSCH/E-DSCH" is referred to on page 28, line 5 as "PDSCH/E-DSCH". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "705" in FIG. 6 has been used to designate both the A/D and COMMON PROCESSING. On page 24, line 16, the A/D is referred to as element

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704. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: (i) On page 6, line 21, (UL-DPCH) should be (UL-DPCCH) as shown in FIG. 3 (ii) On page 12, line 5, UL-DPCH should be UL-DPCCH as shown in FIG. 4A (iii) On page 13, lines 19 and 22, UL-DPCH should be UL-DPCCH as shown in FIG. 4A

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mesecher (U.S. Patent No. 6,115,406) in view of Kuwahara et al. (U.S. Patent No. 6,597,678).

Regarding Claims 1 and 21, Mesecher discloses an apparatus and method having at least two antennas, for controlling a diversity of data transmitted through the antennas, comprising: a first spreader for spreading first data and outputting a first spread signal (Fig. 4 element 74, col 3, lines 43-45); a second spreader for spreading second data and outputting a second spread signal (Fig. 4 element 76, col 3, lines 43-45); a first multiplier for multiplying a first weight for a first antenna by the first spread signal output from the first spreader, and outputting a first weighted spread signal (Fig. 4 element 360, and D_{11}); a second multiplier for multiplying a second weight for a second antenna by the first spread signal output from the first spreader, and outputting a second weighted spread signal (Fig. 4 element 366, and D_{21}); a third multiplier for multiplying a third weight for the first antenna by the second spread signal output from the second spreader, and outputting a third weighted spread signal (Fig. 4 element 362, and D_{12}); a fourth multiplier for multiplying a fourth weight for the second antenna by the

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second spread signal output from the second spreader, and outputting a fourth weighted spread signal (Fig. 4 element 368, and D_{22}) ; a first adder for adding the first weighted spread signal to the third weighted spread signal (Fig. 4 element 62), and transmitting the added signal through the first antenna (Fig. 4 element 48); a second adder for adding the second weighted spread signal to the fourth weighted spread signal (Fig. 4 element 64), and transmitting the added signal through the second antenna (Fig. 4 element 50); However, Mesecher does not disclose expressly a weight generator for determining the first to fourth weights from feedback information received from a UE (User Equipment), and providing the determined first to fourth weights to the first to fourth multipliers, respectively. Kuwahara et al. discloses a weight generator (Fig. 2 element 105, col 6, lines 21- 23) for determining the first to fourth weights from feedback information received from a UE (User Equipment) (Fig. 2 element 104, col 6, lines 19-21) and providing the determined first to fourth weights to the first to fourth multipliers (Fig. 2 element 113, col 6 lines 23-25), respectively. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Kuwahara et al.'s teaching into Mesecher for producing the claimed invention because applying the feedback information from the user equipment and generating weights based on the signal level received from the user equipment such that desired signal power to interference power becomes maximum makes it possible to increase the capacity in terms of the number of simultaneous users in the cell and decrease interference with other cells as suggested by Kuwahara et al. (Refer to Abstract).

Claims 2 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mesecher (U.S. Patent No. 6,115,406) in view of Kuwahara et al. (U.S. Patent No. 6,597,678) and further in view of applicant's admitted prior art .

Regarding Claims 2 and 22, the combination of Mesecher and Kuwahara et al. discloses a weight generator for determining weights from feedback information received from a UE and providing the determined weights to multipliers for transmission but does not disclose expressly a feedback channel received from the UE. The applicant's admitted prior art discloses wherein the feedback information is FBI (feedback information) of an uplink dedicated physical control channel (UL-DPCCH) received from the UE (Fig. 3, Page 6, lines 20-23). Kuwahara et al. teaches the use of feedback information for adjusting the weights of the antenna array. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the FBI channel of the applicant's admitted prior art as a method to provide the required feedback power control information from the UE in the technique as taught by Kuwahara et al.

Allowable Subject Matter

5. Claims 3, 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 4-5, 6, 7-8, 9, 10, 11, 12-14, 15-17, 18-20, 24-25 are allowed.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,101,501 to Gilhousen et al. describes a method and system for providing a soft handoff in communications in a CDMA cellular telephone system specifically addressing the make-before-break handoff process through implementation of a cell-site diversity mode.

U.S. Patent No. 6,069,912 to Sawahashi et al. relates to a diversity receiving technique in a CDMA scheme which despreads received signals from a plurality of antennas at a base station, providing the antennas with adaptive directivity by controlling the values of weighted coefficients and synchronizing between the base station with the mobile station to set the initial values of weighted coefficients.

U.S. Patent No. 6,862,275 to Dabak relates to WCDMA communication system cell site selection including site selection diversity transmit power control (SSDT) using Space Time block coding based Transmit antenna Diversity (STTD) encoding to reduce interference at the mobile receiver, providing it the capability to select one of the remote transmitters with the highest signal-to-interference ratio (SIR).

The three prior arts cited, however, do not provide the teachings of the applicant's invention of applying different weights to the transmit antenna arrays for the downlink dedicated physical channel (DL-DPCH) and the physical downlink shared channel (PDSCH) in the soft handover region under certain channel environment between the user equipment (UE) and Node Bs.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Lin Khoo whose telephone number is 571-272-5508. The examiner can normally be reached on flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Wellington Chin', followed by a long horizontal line extending to the right.

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER